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09/462,506	05/03/2000	IAN CHRISTISON SAYERS	P6439US0	5168

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[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

1762

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13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	09/403,824	Applicant(s)	Sayers
Examiner	M.L. Palfrey	Group Art Unit	1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- Responsive to communication(s) filed on 10/31/02 + 10/30/02.
- This action is FINAL.
- Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- Claim(s) 12 - 26 is/are pending in the application.
- Of the above claim(s) 82 - 25 is/are withdrawn from consideration.
- Claim(s) _____ is/are allowed.
- Claim(s) 12 - 26 and 26 is/are rejected.
- Claim(s) _____ is/are objected to.
- Claim(s) _____ are subject to restriction or election requirement

Application Papers

- The proposed drawing correction, filed on _____ is approved disapproved.
- The drawing(s) filed on _____ is/are objected to by the Examiner
- The specification is objected to by the Examiner.
- The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- All Some* None of the:
- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received
in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

- Information Disclosure Statement(s), PTO-1449, Paper No(s). _____ Interview Summary, PTO-413
- Notice of Reference(s) Cited, PTO-892 Notice of Informal Patent Application, PTO-152
- Notice of Draftsperson's Patent Drawing Review, PTO-948 Other _____

Office Action Summary

1. Applicant's election with traverse of Group II, method claims 12-21 in Paper No. 7 is acknowledged. The traversal is on the ground(s) that it is not a serious burden for the examiner to examine all claims, as the examiner has asserted that two prior art references show the special technical feature of non-elected Group I. This is not found persuasive because Applicant has already canceled the claims of Groups I and III making their arguments with respect to those claims mute, and have made no specific arguments with respect to Group III, apparatus claims. Furthermore, products such as fabrics (Group I), plasma processes (Group II) and plasma apparatus (Group III) are classified in three specific classes, consisting 3 separate searches, and each have different considerations as to what makes them novel and unobvious, thus examining more than one group can be a significant burden on the examiner who is not given extra time to do the extra work involved.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 12-21 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, last 2 lines (marked up version), the meaning of "self-sealing fabric entry and exit openings" is unclear or ambiguous, because it is uncertain as written if openings are merely for the fabric, or if the sealing mean constitutes fabric. Either option can be considered as presently written. In line 3, "continuously subjecting" literally means that the fabric or component thereof, is never removed from the plasma, although the examiner does not believe this is the intent, as it is illogical, hence the limitation is indefinite. The limitation might logically be intended to mean that the plasma is not pulsed.

In claim 26, the members of the Markush group are unclear and appear to overlap, i.e. sintered felts are non-woven; either coatings or membranes can be considered films; and any of the structures described, could be made of polymers (although what “matrix” adds to the meaning is unclear). Furthermore, a coating on a fabric, is not a fabric, hence is not a proper species thereof. A membrane may or may not be a fabric, so describes an enduse of a material, and is not consistent with structural species groupings.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 12, 15, 18-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusano et al as discussed in section 7 of Paper No. 9.

Kusano et al’s teachings of using hydrocarbon or fluorine compounds in a gas mixtures, do not teach using or imputing any water or solvent, hence may be considered consistent with the

amended “solvent free” and “water free atmosphere” of the claims. It is noted that in the summary Kusano et al mention that members being treated may have high water contents or volatile plasticizers, but those are part of the substrate initially and not input with the atmosphere or part of the treatment *per se*. Kusano et al’s plasma treatments are continuous plasmas, not pulsed plasmas (col. 4, lines 23-52 and Ex. col. 5).

Kusano et al differs by not discussing how the substrate, that may be the claimed fabrics, is imputed or taken out, and does not discuss how the atmosphere of the plasma chamber is isolated from that outside the chamber, however it would have been obvious to one of ordinary skill in the art that for the taught gas mixtures that do NOT include air, that the chamber of Kusano et al would have been sealed from the outside atmosphere, especially with the use of fluorocarbons (toxic &/or corrosive, etc). Furthermore, “self-sealing” as presently claimed has many possible meanings. A door or portal when closed maybe considered to be self-sealing, as would any entry/exit set up that does not leak. Therefore, it would have been obvious to one of ordinary skill in the art to use portals in Kusano et al that do not leak, since their halogenated gases can be toxic or corrosive.

5. As Paskalov et al ('462) uses the explicit addition of H₂O, applicants' amendments have removed the rejections over this reference. However, note that the addition of water is an improvement over the prior art; so indicating the same process is known without H₂O.

6. Claims 12-15, 19 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Paskalov ('576) as discussed in sections 9 (and 8) of Paper No. 9.

Paskalov et al (576)'s plasma "may" add water, not must (col. 3, lines 1-21) and while they teach it is desirable to add water, because of the resulting "superior activation and preparation of the surfaces with shortened treatment times as compared to treatment with dry gas..." (emphasis added), their comparison statement makes it clear that the process is known and has been done without H₂O, thus reading in the claimed solvent free and water-free amendments. The plasma process of Paskalov et al (576) is a continuous plasma, not a pulsed plasma, thus reading on a possible meaning of the claims, and Fig. 1, reference No. 7 illustrates the "opening end closure" of the chamber, which is considered to read on the broad scope of possible means for "self sealing", as presently written.

7. Claims 12-21 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiner et al.

While Reiner et al do not explicitly state "solvent free" nor "water free atmosphere", neither do they teach one to use either water nor solvent in the plasma treatment, and their atmospheres are controlled, not based on air, so these features are considered satisfied. Plasmas discussed on col. 6, lines 33-67 are continuous plasma, and at low pressures, so while the types of openings and their sealing means are not discussed they would have been expected not to leak, hence self-sealing would have been obvious as discussed in section 4.

8. Claims 12-15, 18-19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milding et al as discussed in sections 11 and 12 of Paper No. 9.

Milding et al may use a reduce pressure plasma, hence must be sealed to achieve such, so while the means to do so are not discussed, they would have been obvious as asserted in section 4. No use of H₂O or solvent in the plasma is taught, nor are pulsed plasma, thus continuous is

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assumed, lacking means to produce otherwise. Also, note that while it is not what's claimed per se on page 7, lines 25-30, it is taught that material is continuously fed through a vacuum chamber and continuously treated while, its passed through. In such a situation, with taught evacuation and feed means, it would continue to have been obvious to employ a means of sealing the chamber, so that the taught vacuum may be maintained.

9. Claims 12-14 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu et al (section 13 of Paper No. 9).

While Komatsu et al's option of using air is excluded by the amended claims, because it contains H₂O vapor, the option of O₂ mixed with N₂ or Ar or He contains no solvent or water, and the plasma is a continuous plasma. While chamber closures are not discussed, the obviousness of "self-sealing" as discussed in section 4, also applies here.

10. Claims 12, 13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffrey et al (Section 14 of Paper No. 9).

While Jeffrey et al's teaching of H₂O vapor is excluded by the amendments, alternative sources of hydroxyl groups, such as ethylene glycol vapor are taught, so taught plasma treatment atmospheres still read on the claims. Jeffery et al's plasma is a continuous plasma, and at 0.05 torr, so sealing of the chamber would have been expected in order to maintain the low pressure. Reasons for obviousness as in section 4 again apply.

11. Claims 12, 13, 15, 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirotsu (section 16 of Paper No. 9).

Hirotsu's plasma does not use water or solvents, it is not pulsed, so may be assumed to be constant. The input/output opening(s) for porous sheet (6) is not discussed in the abstract, nor

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shown in Fig. 1, but considering the use of siloxanes, and pressures shown in the table on page ((2) or 458), one would have expected sealed openings, thus obviousness arguments of section 4 again apply.

12. Claims 12, 13, 15-17, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Normura (section 17 of Paper No. 9).

Normura teaches use of neither water nor solvents in their plasma, which is a continuous plasma. While not discussing input and output openings, Fig. 3 (discussed in cols. 7-8) shows that spools must be input in one chamber (35A) and output in another (35B), and the system is under vacuum, hence must be sealed to maintain that taught vacuum, thus arguments section 4 again apply.

13. Claims 12, 13, 15, 16, 18, 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (section 18 of Paper No. 9).

Yamamoto et al teach no use of H₂O or solvent in their constant plasma which is made under vacuum, but also does not discuss input/output opening(s) for the substrates. See again arguments of section 4 for applicable obviousness.

14. Applicant's arguments filed 10/31/02 and discussed above have been fully considered but they are not persuasive.

Applicant's "continuously" and "self-sealing" amendments, did not exclude the applied references, for reasons as discussed above. The examiner suspects that a narrower meaning might have been intended, but the claims as presently written are to broad to remove the above references.

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15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication should be directed to M. L. Padgett at telephone number (703) 308-2336 on M-F from about 8:30 a.m. to 4:30 p.m.; and FAX# (703) 892-9311 (after final); or 305-6078(informal).

M.L. Padgett/dh 2/24/03

March 26, 2003



MARIANNE PADGETT
PRIMARY EXAMINER